

SMARTDECK

VE VAN ELLE
TOTAL FOUNDATION SOLUTIONS

SMARTDECK

Smartdeck is Van Elle's piled raft foundation system for residential and commercial structures. Our foundation system delivers improved cost and programme certainty for foundations within the private and commercial sectors.

WHAT ARE THE ADVANTAGES OF SMARTDECK?

Smartdeck is approved by the UK leading warranty providers and has many features that offer enhanced safety on site.



Fast and cost-effective - primarily cuts costs by removing the need for excessive spoil removal & cast in-situ ground beams. Reducing the cost of excavation, spoil removal, and potential for a reduced piling mat requirement due to utilisation of our lightweight rigs.



Flexibility within in house design to be able to tailor the slab and pile layout to suit the site specific requirements.



Smartdeck is more environmentally friendly than traditional methods. By typically using less concrete than mass fill strip foundations minimising excavations thus reducing vehicle and plant movements on site, significantly reducing your CO2 emissions, reducing the amount of spoil to landfill each year, and reducing landfill tax levies.



WHAT ARE THE COMMON USES OF SMARTDECK

- Housing, low rise apartment blocks, care homes, medical centres, classrooms, and temporary buildings.
- Ideal for overcoming challenging ground conditions, including heave and contaminated soils.

In comparison to other foundation solutions, Smartdeck greatly reduces environmental impact by reducing spoil removal and the resulting vehicle movements, in turn also delivering a safer working environment on site.

Smartdeck eliminates the need for traditional pile and beam and strip foundations. It is suitable for all projects and construction types, including timber frame, sealed panels, or modular construction.

Smartdeck can be constructed on improved or stabilised ground, drilled, driven, helical, or displacement piles and vibro stone columns.

To account for heave risk or suspected gas presence, we can provide a ground bearing slab or a voided system with ventilation.

We provide support throughout the entire process. Our expert operatives install piled raft foundations after our in-house design team creates custom, effective designs to fulfil the project requirements. These include building size, loadings, and ground conditions.

SMARTDECK DOES NOT REQUIRE THE FOLLOWING ELEMENTS:

- Deep excavations to accommodate cast in situ ground beams
- Ground beams
- Block and beam or pre-cast floor planks
- Excessive under build brickwork



VAN ELLE SMARTDECK SEQUENCE

1



SITE INVESTIGATION (SI)

Understand soil profile, ecology and conservation

DESIGN AND VALUE ENGINEERING

We work with the client to provide the best design for their method of construction

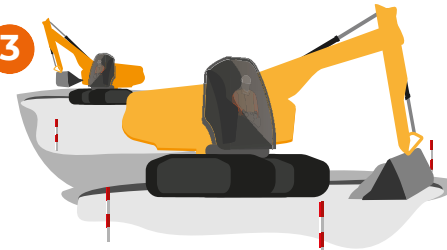
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GEOTECHNICAL ENGINEERING

Our capabilities enable us to provide ground improvement through drilling and grouting in addition to vibro stone columns and rigid inclusions

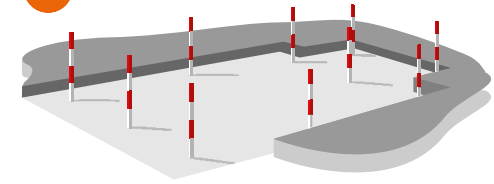
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REDUCED LEVEL DIG AND PILING MAT INSTALLATION

Your selected groundworker starts by excavating to the required level and installing the designed piling mat

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SETTING OUT

The pile locations are then set out according to the Smartdeck design

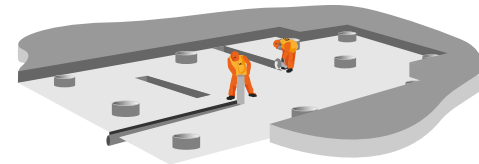
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PILING

We can offer a range of piling techniques including continuous flight auger (CFA), pre-cast driven and tubular steel driven; constructing in-situ pile caps to bespoke designs

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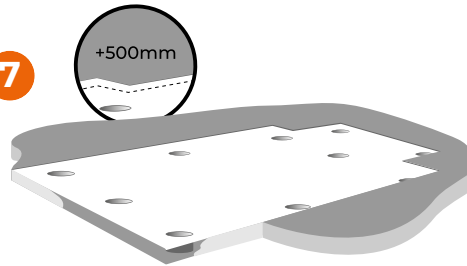
DRAINAGE AND SERVICES

The drainage and services are installed by your preferred ground worker and the piling mat recovered

PILE CROPPING

After the drainage and services have been installed the piles are made ready to be incorporated in to the Smartdeck

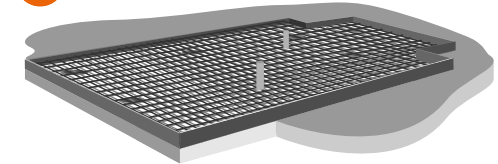
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WORKING SURFACE

The engineered working surface is installed to ensure a level and consistent area for us to position our shutters and install steel reinforcement

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EDGE SHUTTERING & FIX

Install shuttering followed by the steel reinforcement to create the Smartdeck

VOIDED

If voided, the decking will be built on a void former to create the void

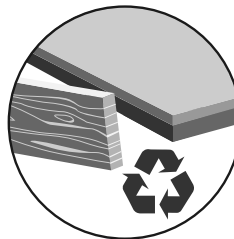
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CONCRETE POUR

Following Q&A and necessary checks have been completed, the Smartdeck is poured

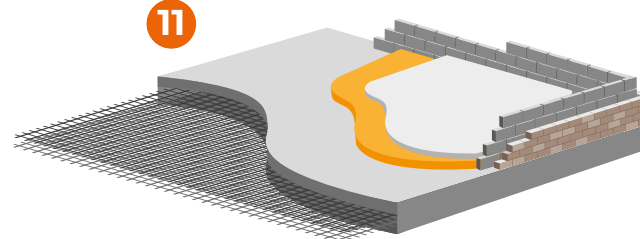
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REUSABLE SHUTTERS

Once the slab has cured, our reusable timber shutters are struck

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FINISHED STRUCTURAL SLAB

The finished slab is ready for trades on average 5-7 days after the concrete pour
If voided, a void barrier will be attached once the slab is cured.

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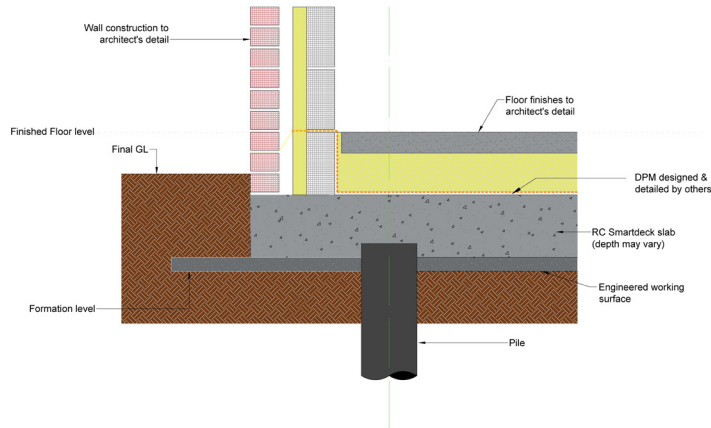


TESTING & HANDOVER

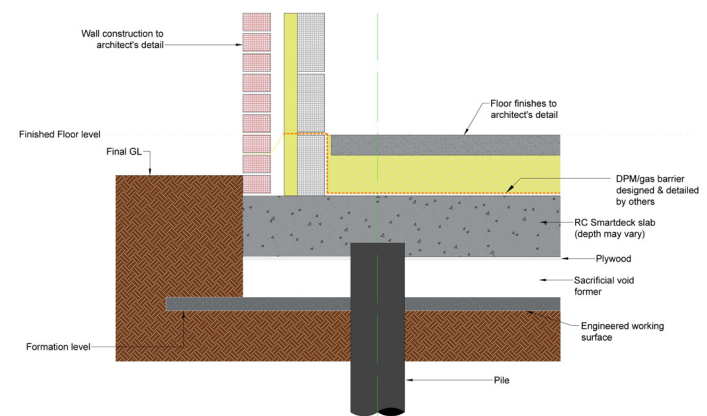
We then provide the client the security of a regulated product that carries all the necessary accreditations

SMARTDECK SECTIONAL DETAILS

TYPICAL SMARTDECK NON VOIDED PILED RAFT



TYPICAL SMARTDECK VOIDED PILED RAFT



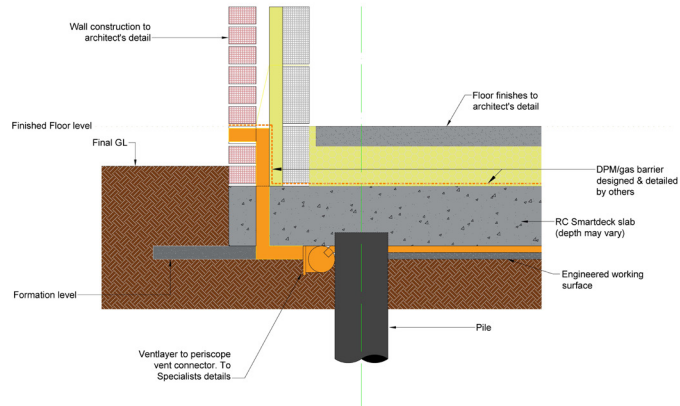
Benefits of Smartdeck

- 1 Significant reduction in excavation
- 2 Significant reduction in underbuild compared to traditional foundations
- 3 Engineered working surface
- 4 No venting required

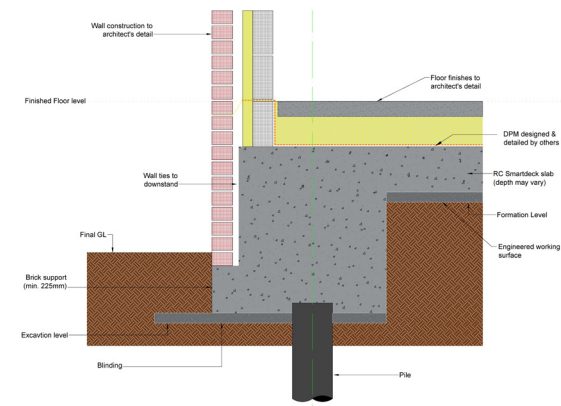
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- 5 Collapsible void to mitigate heave risk

TYPICAL SMARTDECK PILED RAFT FOR GAS VENTING SYSTEM

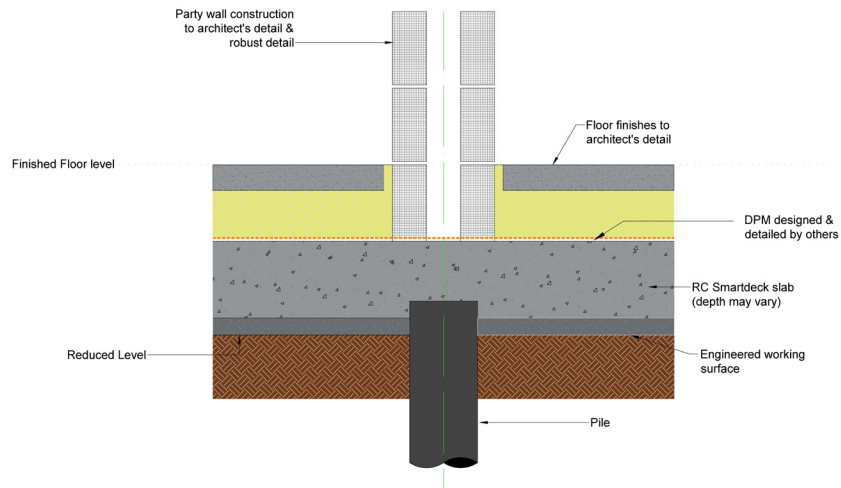


TYPICAL SMARTDECK VOIDED PILED RAFT

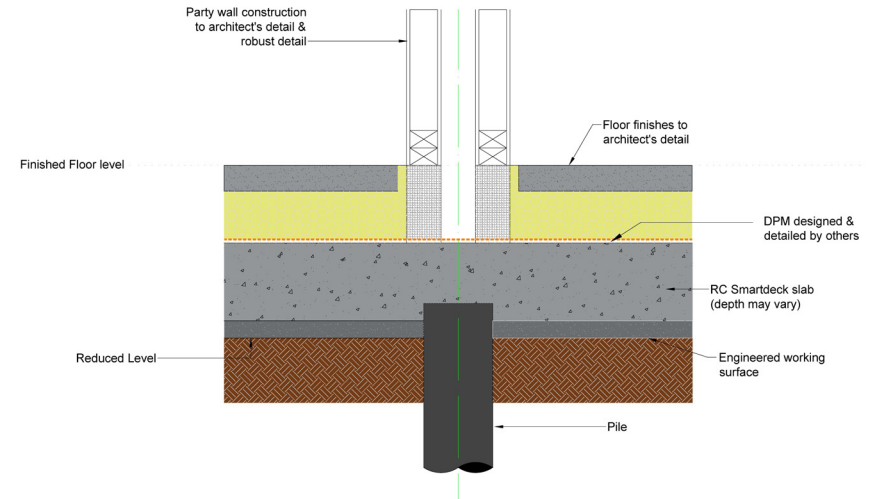


SMARTDECK SECTIONAL DETAILS

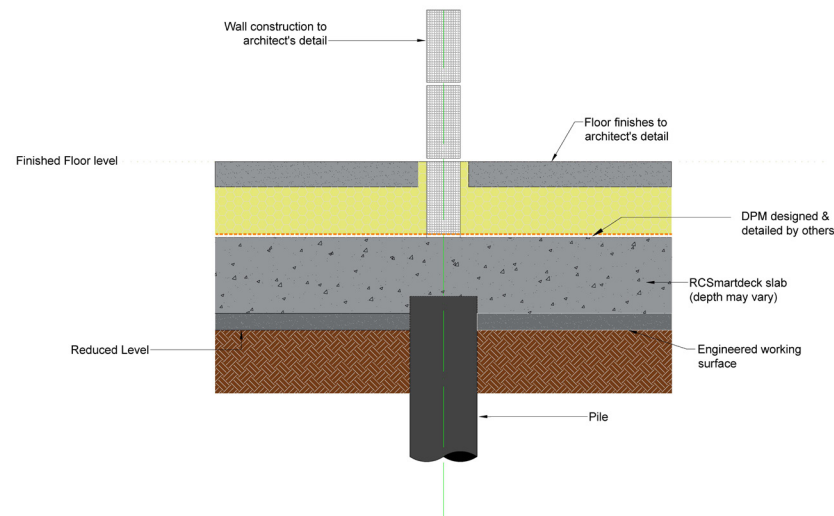
SMARTDECK PARTY WALL DETAIL - BLOCK CONSTRUCTION



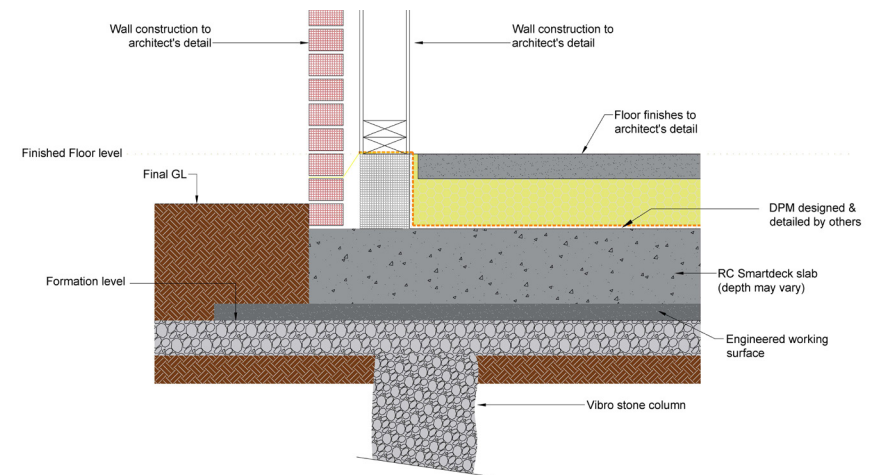
SMARTDECK PARTY WALL DETAIL - TIMBER CONSTRUCTION



INTERNAL LOAD BEARING WALL DETAIL



TYPICAL SMARTDECK ON VIBRO STONE COLUMNS WITH TIMBER FRAME SUPERSTRUCTURE



ACCREDITATIONS



CONTACT US

If you have a particular query or question that you would like to discuss regarding Smartdeck, please contact our specialist housing team on:

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E - info@van-elle.co.uk